

REMARKS

This paper is intended to be a complete response to the above-identified Office Action. Claims 1-3 have been amended. Claims 9-17 have been cancelled without prejudice to their underlying subject matter. Claims 18-32 have been added. Accordingly, twenty (24) claims are currently pending in the instant patent application (claims 1-10 and 18-32).

The Commissioner is hereby authorized to deduct \$72.00 from Deposit Account 501922/149-0055US for new claims 18-32 in accordance with 37 C.F.R. 1.16(c). If additional fees are required, however, the Commissioner is authorized to deduct the additional necessary charges from Deposit Account 501922/149-0055US.

Drawings

The Examiner objected to Figures 2, 3a and 3b for allegedly failing to show necessary textual labels pursuant to 37 C.F.R. 1.84(o). Specifically, the Examiner alleges that the numeric labels “82” (Figure 2), “300” (Figure 3a) and “350” (Figure 3b) would be unclear without textual labels. (Office Action at page 1, ¶ 1.)

Applicant disagrees that the drawings lack clarity. It is believed anyone of ordinary skill in the art would clearly understand what elements 82, 300 and 350 are within the context of the written description. For example, each place in the written description that refers to these elements also recites their associated numeric identifier. See, for example, the specification at page 2, lines 4, 6-7 and 19, page 7, line 19 and page 8, lines 6 and 24. On this point it is noted, there is *no* requirement that the drawings be understandable *separate and apart* from the written description that describes them. Nevertheless, drawing sheets attached as part of this Reply's Appendix consist of changes to those originally filed drawing sheets including Figures 2, 3a and 3b. None of the proposed amendments add new matter. None of the proposed amendments delete matter necessary for Assignee to meet its obligations under 35 U.S.C. 112. None of the proposed amendments are related to the patentability of the claimed subject matter. Specifically:

- A first replacement sheet and associated annotated sheet includes Figure 2 and adds a textual label associated with numeric identifier 82. This amendment is supported by the specification as filed at, for example, page 6, lines 19-21 and lines 25-27.
- A second replacement sheet and associated annotated sheet includes Figure 3a and 3b and adds a textual label associated with numeric identifiers 300 and 350. These amendments are supported by the specification as filed at, for example, page 8, lines 6-8 and 23-26.

Specification

The Examiner objected to Applicant's use of the trademark terms "DB2," "OS/390" and "z/OS." (Office Action at page 1, ¶ 2.) Accordingly, the specification has been amended to explicitly identify "DB2," "OS/390" and "z/OS" as registered trademarks of the International Business Machines ("IBM") corporation.

Allowable Subject Matter

The Examiner has indicated that claims 6-9 would be allowable if rewritten in independent form. (Office Action at page 6.) Assignee gratefully acknowledges the Examiner's review but, for the reasons set forth below, believe all pending claims are allowable over the cited prior art.

Section 102 Rejections

The Examiner has rejected claims 1-4 as allegedly being anticipated under 35 U.S.C. 102(b) by U.S. Patent 6,411,964 to Lyer et al. (hereinafter Lyre). Specifically, the Examiner asserts that Lyer anticipates independent claim 1 as follows:

"creating a data structure" – col. 14, lines 16-32; col. 21, lines 38-39; col. 22, lines 38-66.

"wherein said data structure comprises key ranges of a plurality of database tables and indexes" – col. 4, lines 5-31; col. 6, lines 6-63; col. 12, lines 8-24; col. 22, lines 38-66.

"free space parameters associated with said key ranges" – col. 6, lines 6-63; col. 7, lines 11-36; fig. 11, element 1126; col. 17, lines 49-60.

"redistributing rows within a plurality of page sets of the plurality of database tables and indexes" – col. 4, lines 17-31; col. 6, lines 37-42; col. 10, lines 15-63.

“wherein said redistributing references the key ranges of the data structure and the free space parameters associated with said key ranges” – col. 6, lines 6-63; col. 7, lines 11-36; fig. 11, element 1126; col. 17, lines 49-60. (Office Action at page 3, ¶ 4.)

It appears the Examiner has misunderstood Lyer, the claimed invention or both. Lyer is directed to a technique for “providing in-place reorganization of a database” (Lyer at Abstract; col. 1, lines 6-8; col. 2, lines 6-8), that *distributes free space evenly* (Lyer at col. 3, lines 47-50). In fact, Lyer describes the uneven distribution of free space as a type of degradation that can cause poor performance (Lyer at col. 7, lines 12-15). Reorganization in accordance with *Lyer is purposefully designed to remove such structural degradation such that free space is evenly distributed throughout a tablespace* (Lyer at col. 7, lines 24-27). Thus, Lyer teaches the use of free space parameters such as desired frequency of free pages and desired percent of free space per page to uniformly manage the free space in a tablespace (Lyer at col. 17, lines 49-60 and FIG. 11, element 1126).

In contrast, the claimed invention is directed to the *non-uniform management of free space* in a tablespace (see independent claims 1, 18 and 28). Each pending independent claim recites free space parameters associated with at least two portions of a tablespace -- independent claim 1 recites the “portions” in terms of a first key range and a second key range while independent claims 18 and 28, recites the “portions” in terms of sets of rows. Further, each independent claim requires at least one free space parameter value associated with each of the portions to be different. Thus, *free space management in accordance with the invention is, by definition, non-uniform* as the free space of at least two different portions of the same tablespace are treated differently. As explicitly noted in the written description, this approach to the management of free space within a single tablespace was not available in the prior art. (Written description at: page 1, lines 25-29; and page 2, lines 10-12.)

At no time does Lyer teach that a tablespaces free space may be treated non-uniformly. At no time does Lyer even suggest that such an operation may be beneficial. In fact, Lyer *expressly* teaches that the non-uniform management of free space is a type of “degradation” that can lead to poor performance (see discussion above). Accordingly, not only does Lyer not teach the claimed invention, Lyer actually teaches away from the claimed invention.

In light of the above amendments and remarks, claims 1-9 are believed to be clearly distinguished from Lyer. Accordingly, Assignee respectfully requests the Examiner's section 102 rejections be withdrawn and claims 1-9 be passed to allowance. For at least the same reasons, new claims 18-32 are allowable over Lyer. Such action is also respectfully requested.

Comments Regarding New Claims 18-32

New claims 18-32 are fully supported by the written description as filed. For example, the general concept of non-uniform management of a tablespaces free space is specifically highlighted in the specification at page 2, lines 20-29; page 3, lines 2-3; and the Abstract. A specific example of how the free space associated with different portions of a common tablespace is treated differently (non-uniformly) is discussed in the specification at pages 8, line 4 to page 10, line 25 and Figures 3a and 3b.

Section 103 Rejections

The Examiner has rejected claim 5 as allegedly being unpatentable under 35 U.S.C. 103(a) over Lyer in view of U.S. Patent 5,649,196 to Woodhill et al. (hereinafter, Woodhill). (Office Action at page 5, ¶ 8.)

As an initial matter, Woodhill does not appear to discuss, suggest or even be relevant to the management of free space in a database. (Woodhill does use the term "free space," such use being directed to the file storage space available on a disk drive. See Woodhill at col. 12, lines 38-53. Accordingly, anyone of ordinary skill in the art of database management would clearly understand Woodhill's "free space" and the "free space" of Lyer and the claimed invention are distinctly different.) Accordingly, to the extent Woodhill teaches that a user may specify the amount of *storage* space needed to store one or more files on a disk drive, such understanding, alone or in combination with Lyer, does not teach or fairly suggest the claimed non-uniform management of free space in a database tablespace.

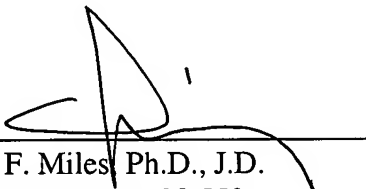
In light of the above amendments and remarks, claim 5 is believed to be clearly distinguished from Lyer and Woodhill (alone or in combination). Accordingly, Assignee

respectfully requests the Examiner's section 103 rejection be withdrawn and claim 5 be passed to allowance.

CONCLUSIONS

Reconsideration of the pending claims (1-9 and 18-32), in light of the above remarks and amendments is respectfully requested. If, after considering this reply, the Examiner believes that a telephone conference would be beneficial towards advancing this case to allowance, the Examiner is strongly encouraged to contact the undersigned attorney at the number listed.

12 MAY 2004
Date


Coe F. Miles, Ph.D., J.D.
P.T.O. Reg. No. 38,559

Wong, Cabello, Lutsch, Rutherford & Brucculeri, LLP
20333 SH 249, Suite 600
Houston, Texas 77070

Voice: 832-446-2418

Facsimile: 832-446-2424

Mobile: 713-502-5382

Email: cmiles@CounselIP.com